REQUEST FOR RECONSIDERATION

Claims 1-18 are pending in this application. Claims 1 and 16 are independent. Claims 5-14 are withdrawn from consideration.

Applicants thank the Examiner for courtesies extended to the representative during the February 22, 2006, personal interview.

As discussed at the personal interview, the present invention provides a component of glass-like carbon for a CVD apparatus. Because the component is roughened over its entire surface and then purified to remove metal impurities, contamination from CVD deposits flaking off of the component is reduced. The purification step can be at high temperatures in a halogen-containing gaseous atmosphere. Preferably, surface roughening of the component is performed on all sides simultaneously so as to minimize dimensional changes caused by the purification step. If surface roughening is performed on the inner and outer sides of a tube separately, comparatively large stresses occur during the purification step, and this makes it difficult to obtain an inner tube with sufficient roundness for a CVD apparatus (although the reason for this is not known). Specification at page 7, lines 2-14; page 8, lines 16-18; page 19, lines 9-17.

Claims 1, 4 and 15-18 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,383,333 ("Haino") in view of U.S. Patent No. 5,993,596 ("Uwai") and U.S. Patent No. 5,833,754 ("Ito"). In addition, Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) over Haino, Uwai and Ito, and further in view of U.S. Patent No. 5,324,411 ("Ichishima").

Haino discloses a hollow, protection member 2 arranged along the inner wall of a plasma processing apparatus. The hollow, inner wall protection member 2 is formed of a glass-like carbon material and has an average surface roughness on its ***inner surface*** of 2.0 μm or less. Haino discloses that the inner surface of the protection member is gradually worn out by reaction with corrosive gas during plasma processing and that if the average surface

roughness exceeds 2.0 μm, then the inner surface of the protection member 2 may fall off as particles depending on wear conditions. Haino at Abstract; Fig. 1; column 2, lines 42-44; 53-55; column 3, lines 17-18; 47-54; column 4, lines 35-36; 62; column 6, lines 53-56.

However, Haino fails to suggest the limitation of independent Claims 1 and 16 of a component having a value of surface roughness (Ra), ***over the entire surface of the component***, ranging from 0.1 to 10 μm (measured according to JIS B0601).

The Final Rejection at page 3, section 9, admits that "Haino et al. and Uwai et al. fail to teach the entire surface of the component (or, both the inner and outer surfaces of the component) having a surface roughness (R_a) ranging from 0.1 to 10 μm".

The Final Rejection cites Ito to remedy this deficiency of Haino and Uwai.

Ito discloses a shield (i.e., sleeve 9) "disposed closely adjacent to but spaced from the inner surface of the generally cylindrical sidewall portion" of a reaction chamber 1 of a deposition apparatus. Ito at title; abstract; column 2, lines 35-64; column 3, lines 26-40.

The Final Rejection asserts:

> 10. Examiner notes that one of ordinary skill in the art would have recognized that providing any surface that ***might*** **be exposed to the processing conditions**, whether purposefully or inadvertently, with the same surface roughness characteristics and composition properties as taught for the inner surface directly adjacent the processing area would have been advantageous in order to prevent the detrimental results associated with deposition processing as taught in Haino et al. and Uwai et al.
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> ...
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> 12. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made that when using an inner tube set at a distance from an inner wall of a processing chamber as taught by Ito et al. to have provided any and all surfaces of the inner tube that **might come in contact with the processing environment** with the same surface roughness characteristics and composition properties as provided on the inner surface of the inner tube in order to achieve a reduction of impurities introduced into the processing environment as disclosed by Haino et al., Uwai et al. and Ito et al. (Bold emphasis added.)

However, Ito discloses that the outer wall of Ito's shield (i.e., sleeve 9) does ***not*** come in contact with a processing environment. In particular, Ito discloses:

> In the apparatus of FIG. 2, it will be seen that a sleeve 9 of quartz glass is provided along the inner wall of the chamber 1 with a thickness of about 2 mm to surround the susceptor 2 including the wafer 10 held thereon as well as a major portion of the support rod 3. The **sleeve 9** may be provided **in contact with the inner wall of the reaction chamber 1**, particularly when a heat insulating material is used for the sleeve 9 or when a quartz glass is used for the chamber 1 in combination with the cooling system 8. However, it is **more preferable** to space the sleeve 9 from the inner wall by a **minute distance** that is **set to prohibit the reactant gases from entering into the space between the sleeve 9 and the inner wall**. Typically the sleeve 9 is separated from the inner wall of the reaction chamber 1 by a distance of 1-2 mm. Ito at column 3, lines 27-41 (emphasis added).

Thus, although Ito discloses that the shield (i.e., sleeve 9) is separated from the inner wall of the reaction chamber 1, Ito discloses that the separation is so small that reaction gases cannot enter the space between the outer wall of the shield and the inner wall of the chamber and expose the outer wall of the shield to processing conditions. Absent impermissible hindsight reasoning (M.P.E.P. § 2145.X.A), Ito does not suggest that the entire outer wall of Ito's sleeve 9 "might" come in contact with the processing environment.

Because the outer wall of Ito's shield (i.e., sleeve 9) is close enough to the inner wall of the chamber so as not to be exposed to processing conditions, and the outer wall of Haino's protection member 2 is adjacent to the inner wall of the plasma processing apparatus and not exposed to plasma, neither Ito nor Haino is concerned with controlling the roughness of the outer wall of their respective shield or protection member to limit reaction chamber contamination. Thus, there is no reasonable expectation that the skilled artisan would have been led by Ito or Haino to successfully reach the feature of independent Claims 1 and 16 of a component having a value of surface roughness (Ra), ***over the entire surface of the component***, ranging from 0.1 to 10 μm (measured according to JIS B0601).

Uwai and Ichishima fail to remedy the deficiencies of Haino and Ito. Uwai is cited for disclosing a component for plasma processing having a reduced metal impurity content. Office Action at page 2, section 5. Ichishima is cited for disclosing a glass-carbon component having porosity. Office Action at page 4, section 17.

Because there is no reasonable expectation that the cited prior art would have led the skilled artisan to the limitations of independent Claims 1 and 16 of a component "having a value of surface roughness (Ra), ***over the entire surface of the component***, ranging from 0.1 to 10 μm (measured according to JIS B0601)", the prior art rejections should be withdrawn.

Pursuant to M.P.E.P. § 821.04, after independent product Claim 1 is allowed, Applicants respectfully request rejoinder, examination and allowance of withdrawn process Claims 5-14, which include all of the limitations of product Claim 1.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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